University of Minnesota

Agricultural Extension Service ● U. S. Department of Agriculture

FACT SHEET

SUNFLOWER ATTACHMENT FOR COMBINES

AGRONOMY NO. 14

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Sunflower harvesting attachments are not standard equipment. They are made in local machine shops on special order for specific combines. An attachment for a large combine costs over $400. However, you can reduce cost considerably if you do some or all of the work yourself.

The photographs below show an attachment used in Polk County. The curved sheet metal shield pushes plants forward. Stems pass between the long metal pans that are bolted to the cutterbar.

The conventional combine reel is replaced with a three-arm reel of 1- x 12-inch boards. This reel operates behind the shield and pushes heads toward the cutterbar. The heads are cut off, are thrown into the feeding auger, and pass through the combine.

Use a rub-bar type threshing cylinder. Adjust concave clearance and cylinder speed to keep head breakage and seed dehulling at a minimum.

A grower in Clearwater County constructed an attachment for a 12-foot combine from 3/8-inch exterior plywood. His materials cost under $75. It did a good job and was in good condition after harvesting 100 acres. All other attachments observed in Minnesota were of metal.

The diagram on the other side of this sheet gives the basic design of most attachments. It is taken from Canada Department of Agriculture Publication 1019, Sunflower Seed Production. This diagram is not drawn to scale; measurements are given in inches.

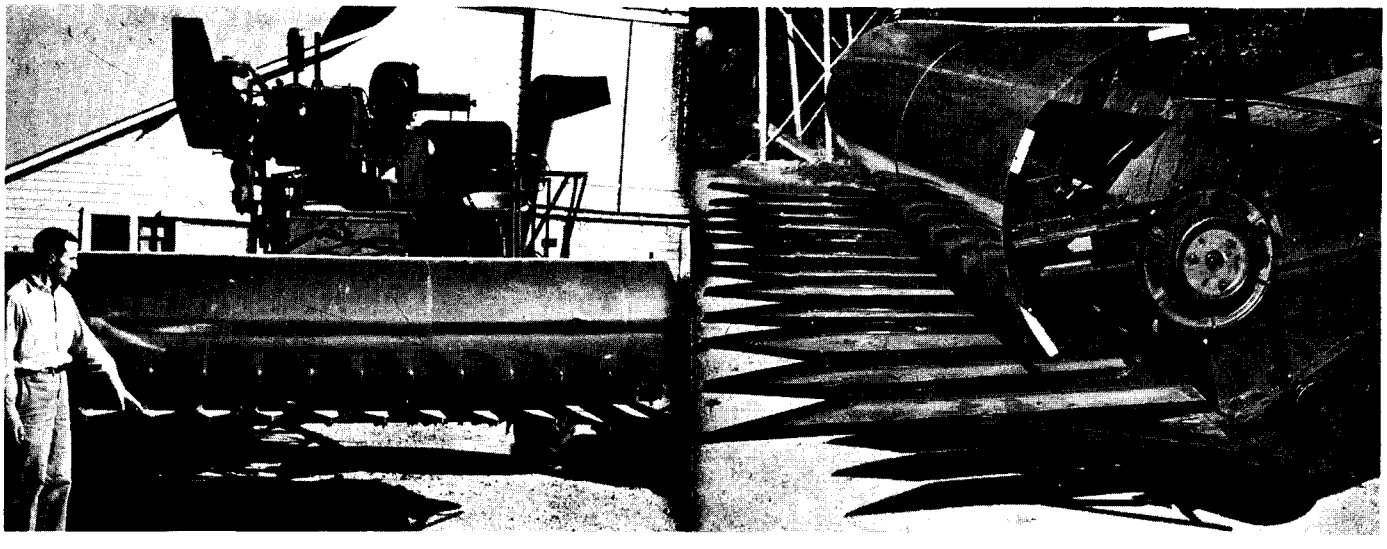
The pans, except for the end ones, in the diagram are 52 inches long, 9 inches wide, and spaced 12 inches center to center. This leaves a 3-inch space for stalks to pass between the pans. A few machines have pans up to 6 feet long, 15 inches wide, and $2\frac{1}{2}$ inches apart. Some growers report that a 3/4-inch overhanging lip around the top edge of the pans helps prevent shattered seed from bouncing out.

Large curved sheet metal dividers could replace the dividing rod (B) on the end pan (see diagram). This makes a smoother looking machine which may do a better job of row separation.

A combine with a corn head attachment can do a fair job of harvesting sunflowers. However, shattering seed are lost since there are no gathering pans to catch them.

Early harvesting, before heads are completely dry, reduces shattering loss. However, artificial drying of seed is then necessary. Safe moisture content is below 12 percent for short time storage and below $9\frac{1}{2}$ percent for long time storage. Moisture contents of up to 15 percent could be satisfactory for temporary storage in freezing weather, but spoilage might start after a few days of warmer weather.

Current information on sunflower varieties is given in Minnesota Agricultural Experiment Station Miscellaneous Report 24, Varietal Trials of Farm Crops. Other information on sunflower production is given in Agricultural Extension Bulletin 299, Sunflower Production in Minnesota.



Key to Letters in Diagram

A - guard clip, 6 inches long, $4\frac{1}{2}$ inches deep.

B - dividing rod of $\frac{1}{2}$-inch iron.

C - piece of 1-x 1/8-inch angle iron, 3 inches long, welded to F.

D - front support bolt and washer.

E - $\frac{1}{4}$-inch iron rod welded to L to permit adjustment of pan height.

F - pan.

G - guard.

H - original angle iron, carrying guard.

J - short plate of 2-x $\frac{1}{4}$-inch strap iron welded to K and bolted to H.

K - new piece of 1 $\frac{1}{2}$-x $\frac{1}{4}$-inch angle iron full width of combine.

L - 1-x $\frac{1}{4}$-inch strap iron brace for supporting pan.

M - 1-x 4-inch board full width of combine.

N - 28-gauge sheet metal shield.

O - 1-x $\frac{1}{4}$-inch strap iron, 36 inches long, shaped to an arc 30 inches across.

P - 1-x $\frac{1}{4}$-inch angle iron, 20 inches long, welded to O.

R - holes 3 inches apart, permitting adjustment of shield height.

S - holes in an arc, which, with pivot hole V, permit adjustment of slope of shield.

T - small $\frac{1}{4}$-inch iron plate, welded to U.

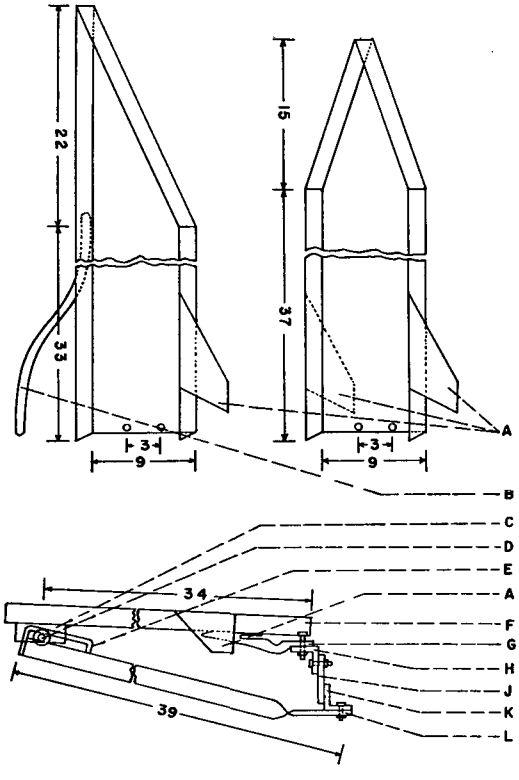
U - $1\frac{1}{2}$-x $\frac{1}{4}$-inch angle iron, 12 inches long.

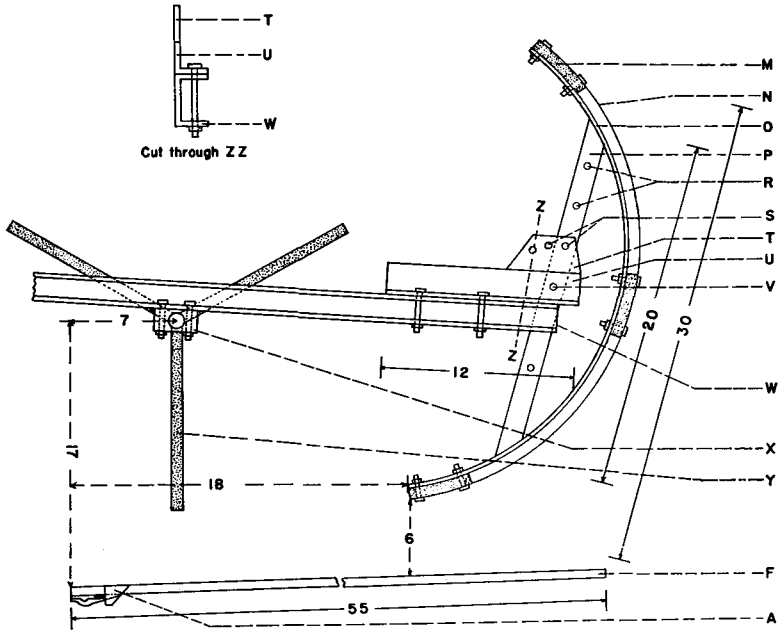
V - pivot hole which, with S, permits adjustment of slope of shield.

W - channel iron support for original reel.

X - reel boxing.

Y - reel arm of 1-x 12-inch board.





Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U. S. Department of Agriculture. Luther J. Pickrel, Director of Agricultural Extension Service, University of Minnesota, St. Paul, Minnesota 55101.

12/64